REMARKS

Claims 1-7, 9 and 10 are pending in this application. Claims 1-6 have been withdrawn from consideration. By this Amendment, claim 8 is cancelled and claim 7 is amended. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and withdrawal of the rejections are respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiners Ribar and Seidleck in the July 21, 2003 personal interview.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration; (c) do not present any additional claims without canceling a corresponding number of finally rejected claims; and (d) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

Rejection Under 35 U.S.C. §102(e)

The Office Action rejects claims 7, 9 and 10 under 35 U.S.C. §102(e) over U.S. Patent No. 6,346,598 to Hashimoto et al. ("Hashimoto"). Applicants respectfully traverse the rejection.

Hashimoto does not disclose each and every element of claim 7. Claim 7 recites "[a] flexible printed board comprising a polyimide insulating layer furnished on a metal foil, the polyimide insulating layer being formed by forming a film of a polyamic acid varnish composition on the metal foil, and subsequently imidizing the polyamic acid varnish composition; wherein: the polyamic acid varnish composition comprises a polyamic acid obtained by addition polymerization of an aromatic diamine and an aromatic acid dianhydride, a solvent, and an imidazolyl-diaminoazine; the imidazolyl-diaminoazine is

present at a ratio of 0.1 to 10 wt parts per 100 wt parts polyamic acid; and the imidazolyl-diaminoazine is selected from" a recited group of imidazolyl-diaminoazines. Hashimoto does not teach such a flexible printed board.

The Office Action asserts that Hashimoto discloses imidazolyl-diamines that are recited in the Markush group of claim 7. The imidazolyl-diamines identified in the Office Action appear in Hashimoto at col. 13, ll. 43-46, and include 2,4-diamino-6-[2'-methylimidazolyl(1')]-ethyl-s-triazine, 2,4-diamino-6-[2'-ethyl-4-methylimidazolyl-(1')]-ethyl-s-triazine and 2,4-diamino-6-[2'-undecylimidazolyl-(1')]-ethyl-s-triazine. None of these imidazolyl-diamines are recited in the Markush group of claim 7. For at least this reason, Hashimoto fails to teach each and every element of claim 7.

Claim 7 is not anticipated by Hashimoto. Claims 9 and 10 depend from claim 7, and thus also are not anticipated by Hashimoto. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejections Under 35 U.S.C. §103(a)

A. Hashimoto in view of Sattler

The Office Action rejects claim 8 under 35 U.S.C. §103(a) over Hashimoto in view of U.S. Patent No. 4,496,715 to Sattler ("Sattler"). Claim 8 has been cancelled, rendering the rejection moot. Applicants submit that amended claim 7, which incorporates the features of cancelled claim 8, distinguishes over Hashimoto and Sattler.

Hashimoto does not teach or suggest claim 7. Sattler does not remedy the deficiencies of Hashimoto. Claim 7 is set forth above. Hashimoto and Sattler would not have rendered obvious such a flexible printed board.

The Office Action asserts that Hashimoto discloses the claimed imidazolyl-diamine. The Office Action concedes that Hashimoto does not disclose the use of an imidazolyl-diamine in the claimed quantity. However, the Office Action urges that it would have been obvious to use an imidazolyl-diaminoazine at a ratio of 0.1 to 10 wt parts per 100 wt parts

polyamic acid because Sattler discloses using tetraisopropyl titanate (IPT) as a catalyst in such quantities in the preparation of a polymeric amide-imide-ester wire enameling composition. Notwithstanding these assertions, Hashimoto and Sattler do not teach or suggest the flexible printed board of claim 7.

As explained above, Hashimoto does not teach or suggest the imidazolyl diaminoazine of claim 7. As admitted in the Office Action, Hashimoto also does not teach employing an imidazolyl-diaminoazine at a ratio of 0.1 to 10 wt parts per 100 wt parts polyamic acid. Sattler also does not teach employing an imidazolyl-diaminoazine at a ratio of 0.1 to 10 wt parts per 100 wt parts polyamic acid. Accordingly, none of the cited references teaches or suggests the features of claim 7.

The Office Action's assertion that Sattler suggests using an imidazolyl-diaminoazine in the claimed amount through its disclosure of the use of IPT in a wire enameling composition is unsupported. The Office Action fails to identify any teaching that IPT and the claimed imidazolyl-diaminoazine are in any way equivalent, much less that the quantities of IPT in the wire enameling composition of Sattler have any relation to the quantity of imidazolyl-diaminoazine in the claimed flexible printed board. Moreover, those of ordinary skill in the art would appreciate that the quantity of reaction promoter used depends on the materials that are being reacted and the application of the resulting composition. In developing the invention of claim 7, the instant inventors identified and solved the problem of blooming that occurs during imidation of polyamic acids to form flexible printed boards. Neither Hashimoto nor Sattler identify this blooming problem, much less teach or suggest a flexible printed board that overcomes the problem. Accordingly, Hashimoto and Sattler fail to teach or suggest the flexible printed board of claim 7.

For the foregoing reasons, Applicants submit that claim 7 distinguishes over Hashimoto and Sattler. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Kaneko in view of Hashimoto

The Office Action rejects claims 7, 9 and 10 under 35 U.S.C. §103(a) over U.S. Patent No 5,494,991 to Kaneko et al. ("Kaneko") in view of Hashimoto. Applicants respectfully traverse the rejection.

Kaneko does not teach or suggest claim 7. Hashimoto does not remedy the deficiencies of Kaneko. Claim 7 is set forth above. Kaneko and Hashimoto would not have rendered obvious such a flexible printed board.

The Office Action asserts that Kaneko discloses a flexible printed board formed by imidizing a polyimide compound following its deposition onto a surface. The Office Action concedes, however, that Kaneko does not disclose employing an imidazolyl-diaminoazine to form the flexible printed board. The Office Action asserts that this failing in the teachings of Kaneko is remedied by Hashimoto's teaching of particular imidazolyl-diaminoazines. However, as explained above, Hashimoto also fails to disclose the claimed imidazolyl-diaminoazines. The imidazolyl-diamines identified in the Office Action appear in Hashimoto at col. 13, ll. 43-46, and include 2,4-diamino-6-[2'-methylimidazolyl(1')]-ethyl-s-triazine, 2,4-diamino-6-[2'-ethyl-4-methylimidazolyl-(1')]-ethyl-s-triazine and 2,4-diamino-6-[2'-undecylimidazolyl-(1')]-ethyl-s-triazine. None of these imidazolyl-diamines are recited in the Markush group of claim 7. Furthermore, neither Kaneko nor Hashimoto teach or suggest employing the claimed imidazolyl-diamines in the quantity recited in claim 7. Accordingly, both Kaneko and Hashimoto fail to teach or suggest each and every element of claim 7.

Claim 7 would not have been rendered obvious by Kaneko in view of Hashimoto. Claims 9 and 10 depend from claim 7, and thus also would not have been rendered obvious by the cited references. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. Kaneko in view of Hashimoto and Sattler

The Office Action rejects claim 8 under 35 U.S.C. §103(a) over Kaneko in view of Hashimoto and further in view of Sattler. Claim 8 has been cancelled, rendering the rejection moot. Applicants submit that amended claim 7, which incorporates the features of cancelled claim 8, distinguishes over Kaneko, Hashimoto and Sattler.

Kaneko does not teach or suggest claim 7. Hashimoto and Sattler do not remedy the deficiencies of Kaneko. Claim 7 is set forth above. Kaneko, Hashimoto and Sattler would not have rendered obvious such a flexible printed board.

The Office Action asserts that Kaneko and Hashimoto disclose the claimed imidazolyl-diamine. The Office Action concedes that Kaneko and Hashimoto do not disclose the use of an imidazolyl-diamine in the claimed quantity. However, the Office Action urges that it would have been obvious to use an imidazolyl-diaminoazine at a ratio of 0.1 to 10 wt parts per 100 wt parts polyamic acid because Sattler discloses using IPT as a catalyst in such quantities in the preparation of a polymeric amide-imide-ester wire enameling composition. As explained above, Kaneko and Hashimoto do not teach or suggest the imidazolyl diaminoazine of claim 7.

Sattler, like Kaneko and Hashimoto, does not teach employing an imidazolyl-diaminoazine at a ratio of 0.1 to 10 wt parts per 100 wt parts polyamic acid. The Office Action asserts that Sattler suggests using an imidazolyl-diaminoazine in the claimed amount because it discloses using IPT in a wire enameling composition in similar quantities. As explained with respect to the rejection over Hashimoto and Sattler, the Office Action fails to identify any teaching that IPT and the claimed imidazolyl-diaminoazine are in any way equivalent, much less that the quantities of IPT in the wire enameling composition of Sattler have any relation to the quantity of imidazolyl-diaminoazine in the claimed flexible printed board. Artisans of ordinary skill would appreciate that the quantity of reaction promoter used in a particular application depends on the materials that are being reacted and the intended

use of the resulting composition. The instant inventors identified and solved the problem of blooming that occurs during imidation of polyamic acids to form flexible printed boards. Kaneko, Hashimoto and Sattler do not recognize this blooming problem or teach or suggest a flexible printed board that overcomes the problem. Accordingly, Hashimoto and Sattler fail to teach or suggest the flexible printed board of claim 7.

For the foregoing reasons, Applicants submit that claim 7 distinguishes over Kaneko, Hashimoto and Sattler. Reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 7, 9 and 10 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

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JAO:JAD/ldg

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